

Brush R.C.

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

RS-INT
RESEARCH PROGRAM
Working Plans

RS-INT
REGENERATION
General
Spraying of Brushfields
(Aerial)

WORK PLAN

AERIAL SPRAYING OF BRUSHFIELDS

By

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Intermountain Forest and Range Experiment Station

June 2, 1958

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Object.---To compare the toxicity of four kinds and/or concentrations of herbicides when applied to ceanothus, snowberry, ninebark, bitterbrush, chokecherry, willow, and sedge by aerial application preparatory to reforestation by planting.

Location.---In the extreme northeast part of the Boise Basin Experimental Forest Headquarters tract reached (currently) by the road to and beyond the Fred Proffer residence. This tract is part of the 1945 Warm Springs burn.

Character of area.---Besides woody shrubs and sedge, the area supports numerous annuals and perennials common to the Boise Basin. In general, it slopes to the south and east and drains into Elk Creek but all aspects are represented within the sprayed area. Only on the extreme north end of plot 2 are there any live trees and these are second growth, some 40 feet high. A few low (less than 30 feet) snags are scattered uniformly over the area in addition to many windfalls of varying sizes. The brush is not distributed uniformly but is amply represented on all plots and all aspects.

Size of plots.--Four 10-acre contiguous plots, each 9 x 11 chains, comprising 40 acres total, will be laid out in approximately a north-south (longer dimension) and east-west direction. They will be numbered from one to four from west to east.

Preparation of area for spraying.--All snags over 30 feet high will be felled prior to the spraying. Red flags 4 feet square will be placed at the corner of each plot to mark their boundaries.

Spraying operation.--Spraying will be done by helicopter on contract from Johnson Flying Service, Missoula, Montana. This should insure good coverage and penetration of spray droplets. Spraying earlier than the third week in July would be preferable but excellent results on sedge and Ceanothus have been secured by hand spraying similar dosages at the end of July so there is no reason to believe the results will be markedly different.

The spraying of each plot will be achieved by posting signalmen with white flags at the ends of a strip and with the exception of the first strip, which will be 9 steps from the corner. The signalman will move up the line 15 steps after each run by the helicopter. Thus about a 45-foot swath will be sprayed on each run.

Spray formulations.--Four different spray mixtures will be employed for comparisons and will be randomized on the four plots.

Plot 1. Mixture of 2,4-D and 2,4,5-T in the proportion of 2½ gallons of solution, 10 gallons of diesel oil and 37.5 gallons of water. This is to be applied at the rate of 5 gallons per acre.

- 200 lbs*
- Plot 2. Mixture of Radapon and 2,4,5-T in the proportion of 7.5 gallons of 2,4,5-T esterone, 10 gallons of diesel oil, and 60 gallons of water, or, enough to make 80 gallons total. This to be applied at the rate of 8 gallons per acre.
- Plot 3. Solution of 2,4,5-T only in the proportion of 7.5 gallons 2,4,5-T esterone, 72.5 gallons of diesel oil. This to be applied at the rate of 8 gallons per acre.
- Plot 4. Mixture of 2,4-D and 2,4,5-T in the proportion of 1½ gallons of stock solution, 10 gallons diesel oil, 18.5 gallons of water to be applied at the rate of 3 gallons per acre.

The formulations on plots 2 and 3 are the results of previous tests elsewhere in cooperation with the Dow Chemical Corporation and from previous experimental work in the same area by hand spraying. Formulations on plots one and four are in cooperation with the Division of Timber Management in Region 4. The Dow Chemical Corporation will provide the 2,4,5-T and the Radapon; R-4 will provide the 2,4-D and 2,4,5-T mixture.

Costs of helicopter service.

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|---|---------------|
| Ferrying time | \$480.00 |
| Grangeville, Idaho to Idaho City, Idaho | |
| Idaho City, Idaho to Missoula, Montana | |
| Spraying | <u>120.00</u> |
| Total | \$600.00 |

Follow-up.--Depending on the effect of the herbicides on the brush and sedge, it is planned to plow the area in the fall of 1958 and plant with 2-1 stock in the spring of 1959. It may, however, require a re-spraying in the summer of 1959 to reach a satisfactory degree of decreased competition suitable for planting.

Results.--Results will be judged either by observation or by sampling within the plots for extent of vegetational mortality or dieback.

Responsibility for work.--Curtis and Foiles will be primarily responsible for the planning, execution of work, follow-up measurements, and whatever analysis and presentation of results appears appropriate.

James D. Curtis

cc: Boise R. C. ✓

JAMES D. CURTIS
Forester